

**WHAT IS CLAIMED IS:**

1. A system comprising:

a magnetic resonance imaging apparatus; and  
patient table,

wherein the magnetic resonance apparatus has a magnet structure, defining a cavity for accommodating a part of the body under examination, which is supported by a base block, the patient table and the apparatus having a base block and a supporting structure respectively, that are slidable in at least one direction, wherein the patient table and the magnetic resonance imaging apparatus have means for removable connection therebetween and guide thereof along predetermined relative displacement paths.

2. The system of claim 1, comprising two or more patient tables that can be simultaneously coupled to the magnetic resonance imaging apparatus in different positions relative thereto.

3. The system of claim 2, wherein a means for coupling patient tables to the magnetic resonance imaging apparatus are guide means for displacement of tables relative to each other and to the magnetic resonance imaging apparatus.

4. The system of claim 3, wherein the means for guiding and coupling the magnetic resonance imaging apparatus to the patient table(s) comprise an arched guide and a carriage to be removably coupled thereto, the guide being associated to the magnetic resonance imaging apparatus, and each table being associated to a carriage that can be coupled to said guide, wherein the table(s) have a supporting structure with wheels or rollers sliding along the bearing surface.

5. The system of claim 1, wherein the base block of the magnetic resonance imaging apparatus has wheels, rollers or other means for sliding relative to the bearing surface.

5 6. The system of claim 1, comprising:

a platform interposed between the magnetic resonance imaging apparatus and the floor, which platform has a base plate and an upper magnetic resonance imaging apparatus supporting plate, which upper support plate lies over the base plate, a sliding guide being interposed between said two plates, which guide is parallel to the table sliding guide, associated to the magnetic resonance imaging apparatus.

10 7. The system of claim 1, wherein the table sliding guide associated to the magnetic resonance imaging apparatus and the sliding guide interposed between the base plate and the upper plate of the platform are oriented along at least one straight axis.

15 8. The system of claim 6, wherein the magnetic resonance imaging apparatus is associated to a table sliding guide that has the shape of a sector of a circle, whose axis is oriented perpendicular to the floor or to the apparatus supporting surface.

20 9. The system of claim 8, wherein the sliding guide between the base plate and the upper supporting plate of the platform for the magnetic resonance imaging apparatus also has the shape of a sector of a circle and is coaxial to the table sliding guide associated to the magnetic resonance imaging apparatus.

5           10. The system of claim 6, wherein the platform has an annular shape and only extends over a limited section, corresponding to the surface supporting the base block of the magnetic resonance imaging apparatus, along the table sliding guide, the opposite side(s) of the magnetic resonance imaging apparatus having slidable support elements whose height compensates for the height difference of the platform, which elements rest directly on the platform bearing floor, and the table supporting structure lies directly on the platform bearing floor, which table supporting structure has elements for sliding on the floor.

10           11. The system of claim 6, wherein the platform also partly extends beneath the table(s), coincident with at least the portion of the table supporting structure at the side whereat the table(s) are coupled to the magnetic resonance imaging apparatus sliding guide.

15           12. The system of claim 11, wherein the portion of the platform which supports at least partly the table(s) extends flush with the upper supporting surface of the portion of the sliding platform which supports the magnetic resonance imaging apparatus.

20           13. The system of claim 12, wherein the portion of the platform which supports the table(s) is stationary and the table supporting structure has means for sliding, particularly rolling, on said portion of the platform.

25           14. The system of claim 12, wherein the portion of the platform which supports the table(s) has an upper table supporting plate which is slidable along a base plate, due to sliding and guide means whose extension is parallel to the sliding and guide means interposed between the upper support plate and the base plate of the platform portion associated to the magnetic resonance imaging

apparatus, whose extension is shaped like a sector of a circle coaxial to the sector shaped sliding guide between the upper support plate and the base part of the platform portion supporting the magnetic resonance imaging apparatus.

5                   15. The system of claim 6, wherein the platform has a magnetic resonance imaging apparatus supporting extension which is designed to also support said apparatus on the side(s) thereof that are not fitted with the table sliding guide.

10                   16. The system of claim 8, wherein the magnetic resonance imaging apparatus has a magnet structure having a cavity for accommodating a body part under examination at least one side thereof forming an extension of the patient supporting surface of the patient table.

15                   17. The system of claim 16, wherein the sector-shaped sliding guides for the table(s) and/or the upper support plate of the magnetic resonance imaging apparatus supporting platform and/or the upper support plate of the extension of said platform, for supporting at least a portion of the table(s) are coaxial to each other, their axis being perpendicular to and intersecting said at least one side of the magnet structure that forms the extension of the patient supporting surface of the  
20                   table(s).

                  18. The system of claim 1, wherein the magnet structure has an annular shape and delimits a cavity, for accommodating the body part under examination, which is open on two parallel sides.

25                   19. The system of claim 1, wherein the magnet structure has three open sides, two opposite parallel sides and one side transverse thereto, and substantially has a C or U shape.

20. The system of claim 8, wherein the sector-shaped guide for the table(s) and/or the upper support plate of the magnetic resonance imaging apparatus supporting platform and/or the upper support plate of the extension of said platform, for supporting at least a portion of the table(s) extends through an angle of 360°.

21. The system of claim 8, wherein the sector-shaped guide for the table(s) and/or the upper support plate of the magnetic resonance imaging apparatus supporting platform and/or the upper support plate of the extension of said platform, for supporting at least a portion of the table(s) extends through an angle of less than 360°.

22. The system of claim 8, wherein the sector-shaped guide for the table(s) and/or the upper support plate of the magnetic resonance imaging apparatus supporting platform and/or the upper support plate of the extension of said platform, for supporting at least a portion of the table(s) extends through an angle of less than 180°.

23. The system of claim 6, wherein the platform for supporting the magnetic resonance imaging apparatus and at least a portion of the table(s) is composed of elements having the shape of coaxial and modular annular sectors.

24. The system of claim 1, wherein the side(s) of the magnet structure that form an extension of the table(s) have an outer edge that is arched substantially coaxial to the table sliding guide, which edge extends along said guide and is superimposed thereto, level with the table surface.

25. The system of claim 2, wherein the guide for relative slidable displacement of the patient table and the magnetic resonance imaging apparatus is fitted onto an intermediate table part that may be removably coupled to the magnetic resonance imaging apparatus and has a complementary cavity for accommodating the magnet structure sides which form the extension of the table(s), said intermediate part of the table being common to the two or more tables that may be simultaneously coupled to the magnetic resonance imaging apparatus.

26. The system of claim 25, wherein said intermediate part of the table is coupled to the magnetic resonance imaging apparatus, by means of sliding guides, along which the sliding motion occurs along at least one coupling and uncoupling direction, means being provided for locking said intermediate part of the table in the coupling limit stop position and/or in one or more different intermediate positions marking different distances of the intermediate part of the table from the magnet structure of the magnetic resonance imaging apparatus.

27. The system of claim 8, wherein the table(s) are coupled to the magnetic resonance imaging apparatus at one end side and extend substantially radially with respect to the sector-shaped sliding guide.

28. A system comprising:  
a magnetic resonance imaging apparatus; and  
two patient tables that are coupled to said apparatus on substantially diametrically opposite sides of a guide for relative slidable displacement of said patient tables and said apparatus, which guide consists of least two diametrically opposite, separate sections, which extend through an angle of less than 180°, especially of less than 90°, and said guides straddling the line that joins the

longitudinal axes of the patient tables, which passes through the cavity for accommodating the body under examination, which cavity is defined by the magnet structure.

5                   29. The system of claim 28, wherein the two separate guide sections are coaxial to each other.

30. The system of claim 29, wherein the two guide sections are diametrically opposite portions of a single continuous sector-shaped guide.

10                   31. The system of claim 28, wherein only the tables and/or only the magnetic resonance imaging apparatus and/or both may rotate coaxial to said guide or to said separate guide sections.

15                   32. The system of claim 28, wherein the magnetic resonance imaging apparatus and/or the tables have wheels or means allowing them to slide or roll on the floor surface and/or on a platform.

20                   33. The system of claim 28, wherein the two tables have means for locking them in the angular positions in which they are coupled to the magnetic resonance imaging apparatus.

25                   34. A system comprising:  
a magnetic resonance imaging apparatus; and  
at least one patient table or two tables that are coupled to said apparatus on substantially diametrically opposite sides of a guide for relative slidable displacement of said patient tables and said apparatus, which guide has the shape of a sector of a circle, and at least one platform that rotates with an axis of rotation

coaxial to the axis of the sector-shaped guide for the table(s), the magnetic resonance imaging apparatus being positioned on said platform, whereas the table(s) have means allowing them to slide or roll directly on the floor.

5                   35. The system of claim 34 comprising:

                  a platform having an annular or circular shape or the shape of a sector of a ring or a circle, said platform rotating about its axis, which is coaxial to the axis of the table sliding guide, an additional annular platform being provided adjacent and coincident with the area supporting at least a portion of the table supporting structure, which additional platform supports at least a portion of the table supporting structure.

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                  36. The system of claim 35, wherein the annular platform which supports at least a portion of the table structure is also rotatable and coaxial to the platform for supporting the magnetic resonance imaging apparatus and to the axis of the table sliding guide.

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                  37. The system of claim 36, wherein the table supporting structure rests on the rotating platform in a non slidable manner at one end side, and on the floor or a stationary platform, with the interposition of sliding or rolling means, at the other end side.

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